UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,725	09/14/2000	Donald C D Chang	PD-200101	9196

20991 7590 10/02/2003

HUGHES ELECTRONICS CORPORATION
PATENT DOCKET ADMINISTRATION RE/R11A109
P O BOX 956
EL SEGUNDO, CA 90245-0956

EXAMINER	
TORRES, MARCOS L	
ART UNIT	**PAPER NUMBER**
2683	6

DATE MAILED: 10/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/661,725	CHANG ET AL.	
	Examiner	Art Unit	
	Marcos L Torres	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 5, 9-11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Yeh.

As to claims 1, Gross discloses a communications system (see col. 1, lines 8-9) comprising: stratospheric platform having a payload controller (see col. 1, lines 9-11; col. 4, lines 52-54) and a phased array antenna having a plurality of main array antenna elements for generating a plurality of communication beams (see col. 4, lines 49-52); a gateway station in communication with said stratospheric platform (see col. 5, lines 10-12), said gateway station scaling the plurality of elements to form a plurality of beams and auxiliary element output, said gateway station communicating a control signal to the stratospheric platform to communicate a scaling of elements to form the communication beams and the auxiliary element output (see col. 5, lines 10-22).Gross do not specifically disclose a plurality of auxiliary elements for canceling interference between the communication beam. Yeh discloses a plurality of auxiliary elements for canceling interference between the communication beam (see col. 2, lines 43-55). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine these teachings in order to have a better communication avoiding interference.

As to claim 5, Yeh discloses a system wherein said auxiliary element output is a function of a direction of the plurality of the communication beams (see col. 2, lines 47-55).

As to claim 9, Gross discloses a system wherein said ground station is coupled to a terrestrial network (see col. 5, lines 16-22).

As to claim 10, Gross discloses a system wherein said terrestrial network comprises the Internet (see col. 10, lines 13-22).

As to claim 11, Gross discloses a system wherein the terrestrial network comprises the public service telephone network (see col. 5, lines 39-44).

Regarding claim 18 is the corresponding method claims of system claim 1. Therefore, claim 18 is rejected for the same reason shown above.

5. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Yeh as applied to claims 1, 5, 9-11 and 18 above, and further in view of Khalifa.

As to claims 2 and 3, Gross discloses everything claimed as explained above except for a communications system wherein the controller comprises a demultiplexer for receiving control signals. Khalifa discloses a communications system wherein the controller comprises a demultiplexer for receiving control signals (see col. 4, lines 51-57). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use these teachings for an enhanced management of the signals.

As to claim 4, Gross do not specifically disclose a system wherein the element control signals are coupled to an RF feed, the RF feed is coupled to elements of said phased array antenna. However, OFFICIAL NOTICE is taken that it is common and well-known technique to send control signal to an antenna. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this technique to the modified Gross and Yeh system for an enhanced signal transmission and reception.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Yeh as applied to claims 1, 5, 9-11 and 18 above, and further in view of Chang.

As to claims 7 and 8, Gross discloses everything claimed as explained above except for a system wherein said gateway station further comprises a code division multiplexer/demultiplexer. Chang discloses a system wherein said gateway station further comprises a code division multiplexer/demultiplexer (see col. 2, lines 37-46). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use a multiplexer/demultiplexer for the simple purpose of enhanced signal management.

7. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Mc Whirter and further in view of Howard, and further in view of Chang.

As to claims 12 and 13, Gross discloses a communications system (see col. 1, lines 8-9), comprising: a stratospheric platform having; a payload receiver for receiving the RF signals (see col. 4, lines 49-52), a ground station having a beam (see col. 5, lines 10-12). Gross do not specifically discloses having; a beam generator for generating a plurality of beam control signals, a digital beam former circuit receiving the beam control signals and generating a plurality of first element control signals for generating communication beams and a plurality of auxiliary element control signals for canceling interference from the communication beams, a multiplexer multiplexing the first element control signals, and an RF subsystem for communicating an RF signal corresponding to the first element control signals and the auxiliary element control

signals; a demultiplexer demultiplexing the RF signals into a second plurality of element control signals corresponding to the first element control signals and a second plurality of auxiliary element control signals and generating a plurality of communication beams in response to the second plurality of element control signals and a plurality of auxiliary element outputs in response to the second plurality of auxiliary element control signals. Mc Whirter discloses a beam generator for generating a plurality of beam control signals, a digital beam former receiving the beam control signals and generating a plurality of first element control signals for generating communication beams and a plurality of auxiliary element control signals for canceling interference from the communication beams (see col. 4, lines 56-64). Howard discloses a multiplexer multiplexing the first element control signals, and an RF subsystem for communicating an RF signal corresponding to the first element control signals and the auxiliary element control signals (see col. 17, line 17 – col. 18 line 23). Chang discloses a demultiplexer demultiplexing the RF signals into a second plurality of element control signals corresponding to the first element control signals and a second plurality of auxiliary element control signals and generating a plurality of communication beams in response to the second plurality of element control signals and a plurality of auxiliary element outputs in response to the second plurality of auxiliary element control signals (see col. 2, line 37 – col. 3, line 3). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine these teachings for reduce interference and enhance transmission and reception quality.

As to claim 14, Gross discloses a system wherein said ground station is coupled to a terrestrial network (see col. 5, lines 16-22).

As to claim 15, Gross discloses a system wherein said terrestrial network comprises the Internet (see col. 10, lines 13-22).

As to claim 16, Gross discloses a system wherein the terrestrial network comprises the public service telephone network (see col. 5, lines 39-44).

8. Claims 6, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Mc Whirter and further in view of Howard, and further in view of Chang as applied to claims 12-16 above, and further in view of Ide.

As to claims 6, 17 and 19, Gross a system wherein the gateway station comprises a plurality of gates (see col. 5, lines 10-22). Gross do not specifically disclose each having a respective weight, said auxiliary element output being a function of said weight. Ide discloses wherein the gateway station comprises a plurality of multiplication gates each having a respective weight, said auxiliary element output being a function of said weight (see col. 3, line 12 – col. 4, line 59). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add these teachings to the modified Gross and Yeh system for a better signal transmission and reception.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Lomp U.S. Patent US005991329A

b. Lloyd U.S. Patent US006513758B1

Any response to this Office Action should be mailed to:

Commissioner of Patent and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 703-872-9314

For formal communication intended for entry, informal communication or draft communication; in the case of informal or draft communication, please label "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to:

Crystal Park II
2121 Crystal Drive
Arlington, VA
Sixth Floor (Receptionist)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcos L Torres whose telephone number is 703-305-1478. The examiner can normally be reached on 8:00am-5:30pm alt. friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William G Trost can be reached on 703-305-5318. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

Marcos L Torres
Examiner
Art Unit 2683

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Mlt